IN THE CLAIMS

1. (Currently amended) A method for removing noise from acoustic signals, comprising:

receiving at least two acoustic signals using at least two acoustic microphones positioned in a plurality of locations;

receiving a voice activity signal that includes information on vibration of human tissue associated with human voicing activity of a user;

generating a voice activity detection (VAD) signal using the voice activity signal;

generating at least ~~one transfer function~~ two transfer functions representative of a ratio of energy of the acoustic signal received using at least two different acoustic microphones of the at least two acoustic microphones when the VAD indicates that user voicing activity is absent; and

removing acoustic noise from at least one of the acoustic signals by applying at least one of the at least two transfer ~~function~~ functions to the acoustic signals and generating denoised acoustic signals.

2. (Currently amended) The method of claim 1, wherein removing noise further comprises:

generating ~~at least~~ one ~~second~~ transfer function of the at least two transfer functions to be representative of a ratio of energy of the acoustic signal received when the VAD indicates that user voice activity is present; and

removing noise from the acoustic signals using at least one combination of the at least ~~one transfer function~~ two transfer functions ~~and the at least one second transfer function~~ to generate the denoised acoustic signals.

3. (Previously presented) The method of claim 1, wherein the acoustic signals include at least one reflection of at least one associated noise source signal and at least one reflection of at least one acoustic source signal.

Claims 4 and 5 (Canceled).

6. (Currently amended) The method of claim 1, wherein generating the at least ~~one transfer function~~ two transfer functions comprises recalculating the at least ~~one transfer function~~ two transfer functions during at least one prespecified interval.

Claim 7 (Canceled).

8. (Currently amended) The method of claim 1, wherein generating the at least ~~one transfer function~~ two transfer functions comprises use of at least one technique selected from a group consisting of adaptive techniques and recursive techniques.

9. (Previously presented) The method of claim 1, wherein information on the vibration of human tissue is provided by a sensor in contact with the skin.

10. (Previously presented) The method of claim 1, wherein information on the vibration of human tissue is provided via at least one sensor selected from among at least one of an accelerometer, a skin surface microphone in physical contact with skin of a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

11. (Previously presented) The method of claim 1, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

12. (Currently amended) A method for removing noise from acoustic signals, comprising:

receiving two acoustic signals using two directional acoustic microphones positioned in two locations;

receiving a voice activity signal that includes information on vibration of human tissue associated with human voicing activity of a user;

generating a voice activity detection (VAD) signal using the voice activity signal;

generating ~~at a transfer function~~ <u>at least two transfer functions</u> representative of the ratio of energy of the acoustic signal received using the two acoustic microphones when the VAD indicates that user voicing activity is absent; and

removing acoustic noise from the acoustic signal of one of the microphones by applying <u>at least one of</u> the <u>at least two</u> transfer ~~function~~ <u>functions</u> to the acoustic signal from that microphone and generating a denoised acoustic signal.

13. (Previously presented) The method of claim 12, wherein the at least one acoustic noise source signal includes at least one reflection of at least one associated acoustic noise source signal.

Claim 14 (Canceled).

15. (Previously presented) The method of claim 12, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

16. (Previously presented) The method of claim 12, wherein detecting includes use of a sensor in contact with the human tissue.

17. (Previously presented) The method of claim 12, wherein detecting includes use of a sensor selected from among at least one of an accelerometer, a skin surface microphone in physical contact with a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

Claims 18-20 (Canceled).

21. (Currently amended) The method of claim 12, wherein generating ~~transfer function~~ <u>the at least two transfer functions</u> comprises recalculating the transfer ~~function~~ <u>functions</u> during at least one prespecified interval.

22. (Currently amended) The method of claim 12, wherein generating the ~~transfer function~~ <u>at least two transfer functions</u> comprises calculating the transfer ~~function~~ <u>functions</u> using at least one technique selected from a group consisting of adaptive techniques and recursive techniques.

Claims 23-25 (Canceled).

26. (Currently amended) A system for removing acoustic noise from the acoustic signals, comprising:

a receiver that receives at least two acoustic signals via at least two acoustic microphones positioned in a plurality of locations;

at least one sensor that receives human tissue vibration information associated with human voicing activity of a user;

a processor coupled among the receiver and the at least one sensor that generates a plurality of transfer functions, wherein <u>the plurality of transfer functions includes</u> a first transfer function representative of a ratio of energy of acoustic signals received using at least two different acoustic microphones of the at least two acoustic microphones<u>, wherein the first transfer function</u> is generated in response to a determination that voicing activity is absent from the acoustic signals for a period of time, wherein ~~acoustic noise is removed from the acoustic signals using the first transfer function to produce a denoised acoustic data stream streams~~ <u>the plurality of transfer functions includes a second transfer function representative of the acoustic signals, wherein the second transfer function is generated in response to a determination that voicing activity is present in the acoustic signals for the period of time, wherein acoustic noise is removed from the acoustic signals using one of the first</u>

transfer function and at least one combination of the first transfer function and the second transfer function to produce the denoised acoustic data stream.

Claim 27 (Canceled).

28. (Previously presented) The system of claim 26, wherein the sensor includes a mechanical sensor in contact with the skin.

29. (Previously presented) The system of claim 26, wherein the sensor includes at least one of an accelerometer, a skin surface microphone in physical contact with skin of a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

30. (Previously presented) The system of claim 26, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

31. (Previously presented) The system of claim 26, further comprising:

dividing acoustic data of the acoustic signals into a plurality of subbands;

generating a transfer function representative of the ratio of acoustic energies received in each microphone in each subband;

removing acoustic noise from each of the plurality of subbands using a transfer function, wherein a plurality of denoised acoustic data streams are generated; and

combining the plurality of denoised acoustic data streams to generate the denoised acoustic data stream.

32. (Previously presented) The system of claim 26, wherein the receiver includes a plurality of independently located microphones.

Claims 33 and 34 (Canceled).

35. (Currently amended) A signal processing system coupled among a user and an electronic device, wherein the signal processing system includes a denoising subsystem for removing acoustic noise from acoustic signals, the denoising subsystem comprising a processor coupled among a receiver and at least one sensor, wherein the receiver is coupled to receive the acoustic signals via at least two microphones, wherein the at least one sensor detects human tissue vibration associated with human voicing activity of a user, wherein the processor generates a plurality of transfer functions, wherein a first transfer function representative of a ratio of acoustic energy received by the two microphones is generated in response to a determination that voicing activity is absent from the acoustic signals for a specified period of time, wherein ~~acoustic noise is removed from the acoustic signals using the first transfer function to produce a denoised acoustic data stream~~a second transfer function representative of the acoustic signals is generated in response to a determination that voicing activity is present in the acoustic signals for a specified period of time, wherein acoustic noise is removed from the acoustic signals using one of the first transfer function and at least one combination of the first transfer function and the second transfer function to produce a denoised acoustic data stream.

Claim 36 (Canceled).

37. (Previously presented) The system of claim 35, wherein the at least one electronic device includes at least one of cellular telephones, personal digital assistants, portable communication devices, computers, video cameras, digital cameras, and telematics systems.

38. (Previously presented) The system of claim 35, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

39. (Currently amended) A computer readable medium comprising executable instructions which, when executed in a processing system, remove acoustic noise from received acoustic signals by:

receiving at least two acoustic signals;

receiving human tissue vibration information associated with human voicing activity of a user;

generating a first transfer function representative of a ratio of energy of the acoustic signals upon determining that voicing activity is absent from the at least two acoustic signals for a specified period of time; ~~and~~

~~removing the acoustic noise from the at least two acoustic signals using the first transfer function to produce at least one denoised acoustic data stream~~

generating a second transfer function representative of the at least two acoustic signals upon determining that voicing activity is present in the at least two acoustic signals for the specified period of time; and

removing the acoustic noise from the at least two acoustic signals using one of the first transfer function and at least one combination of the first transfer function and the second transfer function to produce the at least one denoised acoustic data stream.

Claim 40 (Canceled).

41. (Previously presented) The medium of claim 39, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

Claims 42-44 (Canceled).

45. (Previously presented) The method of claim 1, further comprising:

dividing acoustic data of the acoustic signals into a plurality of subbands;

generating a subband transfer function representative of the ratio of acoustic energies received in each microphone in each subband;

removing acoustic noise from each of the plurality of subbands using the subband transfer function, wherein a plurality of denoised acoustic subband signals are generated; and

combining the plurality of denoised acoustic subband signals to generate the denoised acoustic signal.

46. (Previously presented) The method of claim 12, further comprising:

dividing acoustic data of the acoustic signals into a plurality of subbands;

generating a subband transfer function representative of the ratio of acoustic energies received in each microphone in each subband;

removing acoustic noise from each of the plurality of subbands using the subband transfer function, wherein a plurality of denoised acoustic subband signals are generated; and

combining the plurality of denoised acoustic subband signals to generate the denoised acoustic signal.

47. (New) The method of claim 1, wherein the at least two acoustic microphones comprise a first directional acoustic microphone and a second directional acoustic microphone, wherein the first directional acoustic microphone and the second directional acoustic microphone selectively attenuate the acoustic signals based on the direction of arrival.

48. (New) The method of claim 12, wherein the two directional acoustic microphones comprise microphones that selectively attenuate the acoustic signals based on the direction of arrival.

49. (New) The system of claim 26, wherein the at least two acoustic microphones comprise a first directional acoustic microphone and a second directional acoustic microphone, wherein the first directional acoustic microphone and the second directional acoustic microphone selectively attenuate the acoustic signals based on the

direction of arrival.